ABSTRACT OF THE DISCLOSURE

The present invention, generally speaking, provides a hierarchy of configuration storage. The highest level of the hierarchy is an active configuration store; the lowest level is an off-chip configuration store; in between are one or more levels of configuration stores. Every configuration is promoted from the lowest off-chip level, through each level, up to the highest active level. Each ascending level of the hierarchy has a decreasing latency time required to promote a configuration to the next higher level of the hierarchy, and a decreasing amount of available storage. This separation into levels allows the amount of available storage to be adjusted depending on the inherent latency of the level's storage mechanism, where a longer latency requires a larger cache. This in turn allows the total required storage for a given performance level to be minimized.